

Public Input Process and Survey Results

A. Introduction

There are a wide variety of people and organizations that shape telecommunications policy and are impacted by it. Service providers, users, and government agencies all have vital information and ideas to contribute to the development of Vermont's telecommunications future. Statute requires the Public Service Department (PSD) to consult with a range of people and groups when developing this plan including:

- ▶ members of the public
- ▶ representatives of telephone utilities and other providers
- ▶ other interested state agencies

In addition, the PSD is obligated to conduct a survey of Vermont residents and businesses in cooperation with the Agency of Commerce and Community Development (ACCD) and to conduct public hearings on the plan. The purpose of this section is to briefly outline the steps the PSD took to fulfill these mandates, and to publish at length the results of the telephone survey of Vermont households and nonresidential telecommunications consumers.

B. Overview of the Public Input Process

The public input process for the development of the fourth edition of the *Vermont Telecommunications Plan* spanned a period of more than two years and gathered input in a variety of ways. This included a public hearing, interviews with telecommunications service providers, state agencies, and major institutional users, and a series of “sector group” meetings with various categories of telecommunications users.

The PSD held a “scoping” public hearing early on in the development process in May 2002 over the network of Vermont Interactive Television (VIT). In addition, at the request of members of the deaf community, the PSD met separately in an American Sign Language-interpreted session with representatives of the Vermont Association of the Deaf at the PSD's offices in June 2002.

The PSD, in conjunction with the Department of Economic Development, conducted eleven in-depth interviews with technical, financial, and regulatory representatives of a cross-section of telephone companies, cable companies, wireless service providers, and Internet service providers. The Departments held these interviews in December 2002 and January 2003. The companies interviewed were:

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- ▶ Cable television provider North Country Cable;
- ▶ Incumbent telephone companies Verizon, Waitsfield and Champlain Valley Telecom, and Topsham Telephone;
- ▶ Competitive local telephone company Adelphia Business Solutions (now known as Telcove);
- ▶ Competitive local telephone company and Internet Service Provider SoVerNet;
- ▶ Internet service providers Powershift Online and North Country Broadband;
- ▶ Wireless telephone service providers RCC Wireless (currently known as Unicel) and U.S. Unwired (doing business as Sprint PCS).

These interviews, which lasted half a day each, covered a variety of public policy, business financing, and technology development topics. Some of the findings contributed to a study report the PSD and the Department of Economic Development prepared pursuant to Act 144 of the 2002 legislative session. The Departments published this report, the “High-Speed Telecommunications Financing Study,” in February 2003.

To help fulfill its statutory charge to plan for the needs of state government as a user of telecommunications, the PSD also briefly interviewed representatives of a range of state government users. These interviews focused on how various agencies were using telecommunications, as well as upcoming challenges and opportunities. The PSD also expanded the range of these interviews and spoke with representatives of important public institutions. These interviews took place over the period March 2002 through January 2003, and in some instances prompted subsequent follow-up meetings. Agencies, departments, and institutions interviewed included:

- ▶ the Office of the Chief Information Officer
- ▶ the Department of Public Safety
- ▶ the Department of Education
- ▶ the Department of Health
- ▶ the Agency of Human Services
- ▶ the Agency of Transportation
- ▶ the Department of Libraries
- ▶ the Department of Employment and Training
- ▶ the Agency of Commerce and Community Development
- ▶ the Department of Buildings and General Services
- ▶ the Department of Personnel
- ▶ the Enhanced 9-1-1 Board
- ▶ the Vermont State Colleges
- ▶ the University of Vermont
- ▶ Norwich University
- ▶ Fletcher Allen Health Care
- ▶ Vermont Interactive Television

► The Vermont Institutes.

The PSD also sought to get input from a wide range of telecommunications users in an informal setting. To do this, the PSD conducted a series of “sector group” meetings. Each group consisted of about eight to twelve individuals from a variety of technical and non-technical backgrounds. These sessions each lasted for the greater part of a day. The groups were:

- Business and Economic Development
- Health Care
- Higher Education and Training
- K12 Education
- Government

The Windham Regional Commission also co-sponsored with the PSD a cross-sector “regional group” meeting with participants drawn from around the south-eastern Vermont area. All of these meetings worked as brainstorming sessions that allowed the PSD to hear participants discuss ideas and concerns in a semi-formal manner.

In March 2004, the PSD issued a “Public Comment Draft” and conducted a series of four public hearings in April. One hearing was held over VIT, and three were held in person in Burlington, Rutland, and Bennington. The PSD also received written comments from a variety of service providers, local and regional officials, state agencies, and private citizens. In June 2004, the PSD issued a “Final Draft” of the plan and opened a final round of public hearings and written comments. An additional public hearing held over VIT and a final public hearing, conducted jointly with the Vermont House Commerce Committee and the Vermont Senate Finance Committee, were conducted in July 2004.

C. Telephone Surveys

Although public hearings and small-group interviews are useful for collecting input in depth from a range of consumers and service providers, collecting information about the use, attitudes and opinions of a very broad spectrum of telecommunications users requires a different tool. A major work product in the development of the *Vermont Telecommunications Plan* is a statistically valid, scientifically sampled telephone survey of Vermont residential and nonresidential consumers. This survey (which consisted of two separate samples and two separate but related questionnaires) was conducted on the PSD’s behalf in November 2003. It asked both factual questions about Vermonters’ use of telecommunications services and questions about Vermonters attitudes and opinions on a handful of telecommunications-related issues. The PSD conducted similar residential surveys in 1988, 1995, and 1999, and a similar nonresidential survey at the end of 1999/beginning of 2000. The results of the residential and nonresidential surveys follow below, along with accompanying commentary.

OVERVIEW

The nonresidential survey targeted both businesses and other nonresidential organizations that would have business telephone lines. The residential telephone survey reached people at home, but asked not only about Vermonters’ home usage, but also a variety of questions about their telecommunications use outside the home, plus views on telecommunications issues. The surveys included the following areas for investigation:

- ▶ Telephone lines;
- ▶ The local telephone service market
- ▶ Views on local calling area;
- ▶ Telephone company service quality expectations;
- ▶ Wireless and cellular service;
- ▶ The Internet;
- ▶ Telecommuting; and
- ▶ Demographics.

The residential survey covered the following additional topics:

- ▶ Residents’ likes and dislikes regarding their local phone service;
- ▶ Household phone line market demands;
- ▶ Payphone market demands;
- ▶ Cable and satellite (dish) television; and
- ▶ Public access television.

CHARACTERISTICS OF NONRESIDENTIAL RESPONDENTS

The businesses and organizations interviewed were, not surprisingly, small. Large majorities had only one location, located in Vermont, and served people or organizations largely in Vermont. Researchers asked respondents for the amount of telephone lines their organizations had for voice and fax communications. Table 4.1 depicts the results—most organizations had five or fewer lines. In addition, most organizations spent less than \$500/month on telecommunica-

Interpretation of Tables and Figures

It is important to note that many of the wordings of the variable labels and value labels in the data tables and charts are largely abbreviated descriptions of the questionnaire items and available response categories. Responses deemed not appropriate for classification have been grouped together under the “Other” code. In addition, the “Don’t Know” or “Refused” category includes those respondents who

did not know their answer to a question or declined to answer it.

The last column of data in some tables is marked “cumulative.” This column is simply a sum of all previous categories of response and the current category of response. Its primary usefulness is to gauge some ordered or ranked meaning.

Table 4.1:
Nonresidential number of lines for voice and fax

Number	Percent
1-5	83.8
6-10	8.2
11-15	3.5
16 - 20	1.6
21 - 25	0.8
More than 25	1.9

Residential and Non-Residential Survey Methodology

Using a quantitative research design, RKM Research and Communications, completed 401 interviews among Vermont non-residential organizations and 401 interviews among Vermont households. All non-residential telephone interviews were conducted between October 30 and November 11, 2003. All residential telephone interviews were conducted between November 2 and November 16, 2003. Paid, trained and professionally supervised interviewers conducted all interviews.

The PSD provided a fully representative, probabilistic sample of non-residential organizations in Vermont. The population universe for the non-residential survey theoretically includes every non-residential landline telephone number in Vermont. The residential household sample was purchased from Genesys Sampling Systems, utilizing a random digit dial (RDD) MOD1 sample methodology and ID-PLUS process. This sampling methodology provides a pure, simple random probabilistic sample, while identifying non-productive numbers to reduce the cost by increasing productivity.

One survey instrument was used to elicit information from all Vermont non-residential organizations, and one from all residential organizations. In the residential survey, respondents qualified for the survey if they confirmed they were at least eighteen years of age, and were the person who knew “the most about the telephone and Internet services”

that their household used. The sample unit for the non-residential study is a non-residential organization in Vermont, which could include a variety of businesses, governmental agencies, non-profits, schools, colleges, universities and other non-residential organizations. The key to eligibility is a landline that is linked to a non-residential establishment in Vermont. Respondents qualified for the survey if they confirmed they were a non-residential organization, and if they were the person most knowledgeable about their organization’s telecommunication needs in Vermont.

Data analysis was performed by the Center for Research and Public Policy (CRPP). Facets of the study completed by CRPP’s senior staff included: data validation, logic checks, computer analysis, analysis, report writing, and crosstabulations.

Completion rates are a critical aspect of any telephone research survey. Because one group of people might be easier to reach than another group, it is important that concentrated efforts are made to reach all groups to an equal degree. A high completion rate means that a high percentage of the customers within the original sample were actually contacted, and the resulting sample is not biased toward one potential audience. A high completion rate many times indicates an interest in the topic. RKM Research and Communications achieved a response rate of 63.6% for the non-residential survey and 63.5% for the residential survey. Statistically, a sample of 401

surveys represents a margin for error of $\pm 4.9\%$ at a 95% confidence level. In theory, this sample of Vermont non-residential organizations will differ no more than $\pm 4.9\%$ if all Vermont non-residential organizations were contacted and included in the survey. That is, if random probability sampling procedures were reiterated over and over again, sample results may be expected to approximate the large population values within plus or minus $\pm 4.9\%$ -- 95 out of 100 times.

Readers of this report should note that any survey is analogous to a snapshot in time and results are only reflective of the time period in which the survey was undertaken. Should a concerted public information or relations campaign be undertaken during or shortly after the fielding of the survey, the results contained herein may be expected to change and should be, therefore, carefully interpreted and extrapolated. Furthermore, it is important to note that all surveys contain some component of “sampling error.” Utilizing strict random probability procedures has significantly reduced error that is attributable to systematic bias. This sample was strictly random in that selection of each potential respondent was an independent event, based on known probabilities. Each qualified non-residential organization in Vermont had an equal chance for participating in the study. Statistical random error, however, can never be eliminated but may be significantly reduced by increasing sample size.

tions service, as shown in Table 4.5. A large proportion of respondents reported that their organization was based out of a residence. Because the sample drew heavily on small businesses and organizations, the survey results should not be seen as representative of major employers.

Respondents were asked in an open-ended question, “Are there changes in Vermont policies affecting telecommunications that you would like to see?” Table 4.7 shows the results, categorized into groups after the survey was

Table 4.2:
Nonresidential number of locations in Vermont

Locations	Percent
1	87.0
2	8.2
3	2.0
4	1.0
5	0.5
7	0.2
10	0.2
11	0.2
30	0.2
35	0.2

Table 4.3:
Is the organization's primary location in Vermont?

	Percent
Yes	98.0
No	2.0

Table 4.4:
Location of people organization serves

Location	Percent
Mostly in VT	61.8
Mostly outside VT	13.5
Equal in & out	24.7

Table 4.5:
Nonresidential amount spent per month on telecommunications

Amount spent	Percent
Less than \$100	20.7
\$100 to less than \$500	42.4
\$500 to less than \$1000	10.5
\$1000 to less than \$1500	3.5
\$1500 to less than \$2000	1.0
\$2000 to less than \$2500	1.2
\$2500 to less than \$3000	0.2
\$3000 to less than \$4000	1.0
\$4000 or more	11.7

Table 4.6:
Is the company's primary location in a residence in Vermont?

	Percent
Yes	41.9
No	58.1

Table 4.7:
Changes in Vermont policies affecting telecommunications you would like to see--nonresidential

	Percent
Better wireless service	17.2
Lower costs/prices/fees/taxes	9.2
Better broadband service	4.7
More competition or choice	2.5

completed. While a majority of respondents did not supply a specific suggestion, among those that did, getting wireless coverage was the most commonly mentioned issue (17.2% of respondents). More than a third of those respondents saying that there should be a change in policy in favor of better wireless service (6.5% of all respondents) specifically mentioned building more towers in their response. (One and a half percent of all respondents stated a preference for limiting tower numbers or visual impact.) Requests for lower costs or prices in a variety of forms—lower rates,

fewer taxes, bigger calling areas, etc.—were the second most common type of policy change suggested. Policies for better broadband service and more competition or choice were the next most commonly stated. A very small number of respondents mentioned a variety of other issues, including restrictions on spam, telemarketing problems, and cable issues.

CHARACTERISTICS OF RESIDENTIAL RESPONDENTS

In the nonresidential survey, researchers asked respondents to identify their age, education level, sex, and household income. The results for these questions are found in Tables 4.8, 4.9, 4.10, and 4.11.

Table 4.8:
Residential respondents' age

Age	Percent
18 to 25	5.2
26 to 35	16.0
36 to 45	17.0
46 to 55	11.4
55 to 65	19.2
66 and over	18.7

Table 4.8:
Residential respondents' education

Education	Percent
Grades 1st to 8th	1.5
Grades 9th to 11th	3.2
High school graduate	30.7
Some college	23.4
College graduate	25.2
Graduate degree	15.5
Refused	0.5

Table 4.10:
Residential respondents' gender

Gender	Percent
Male	39.9
Female	60.1

Table 4.11:
Residential respondents' income

Income	Percent
Less than \$10,000	1.7
\$10,000 to less than \$15,000	4.5
\$15,000 to less than \$20,000	5.0
\$20,000 to less than \$25,000	7.2
\$25,000 to less than \$35,000	15.2
\$35,000 to less than \$50,000	18.0
\$50,000 to less than \$75,000	21.2
\$75,000 or more	13.2
No answer	5.7
Refused	8.2

THE LOCAL TELEPHONE SERVICE MARKET

Researchers asked respondents for the name of the company that provided their households with local telephone service and nonresidential organizations with the largest number of lines for voice and fax communication to their organization. Verizon is still clearly the largest telephone service provider in the state by far, although competitors have begun to take away retail customers. Just under three quarters (72.1%) of nonresidential respondents reported having Verizon as the company with the largest number of telephone lines. Table 4.12 summarizes the rest of the nonresidential results. Three quarters (75.6%) of households reported having Verizon as the company handling their local telephone services. Table 4.13 summarizes the residential results as collected.

Table 4.12:
Telephone companies serving the nonresidential market

What company provides the largest number of telephone lines?	Percent
Verizon	72.1
VTel	4.5
Waitsfeld and Champlain Valley Telecom	4.2
SoVerNet	3.0
Lightship	3.0
Fairpoint	2.4
TDS	2.0
MCI	1.2
AT & T	1.2
Telcove	1.0
Topsham	0.5
Shoreham	0.2
Franklin	0.2
CTC	0.2
Other	3.0
Refused	1.0

Table 4.13:
Telephone companies serving the residential market

What company provides your local telephone service?	Percent
Verizon	75.6
VTel	5.7
MCI	5.0
Waitsfield Champlain Valley Telecom	5.0
TDS	2.2
AT & T	1.7
Shoreham	1.5
Fairpoint	0.5
SoVerNet	0.2
Topsham	0.2
Other	1.2
Don't Know	1.0

Figure 4.1:
Organizations with contracts to purchase voice & fax
service for a period of time

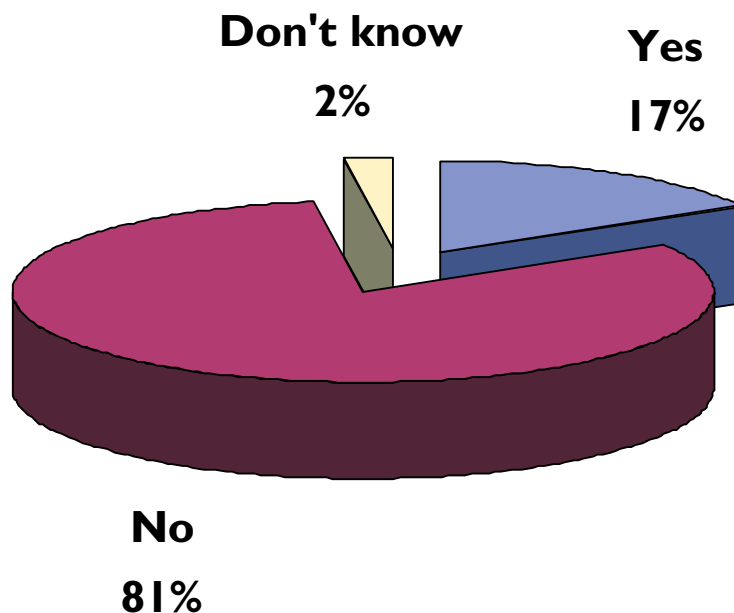


Figure 4.2:
Households expecting to add or drop a phone line in the next
6 months

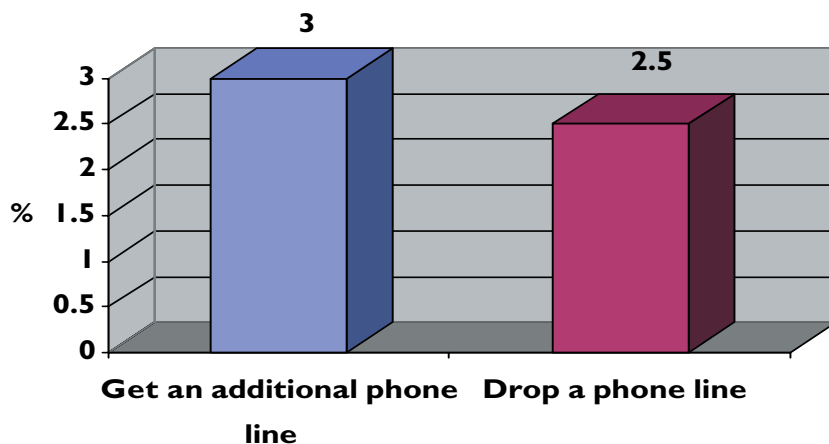


Table 4.14:
Households planning to add a line in next six months

Percent saying "yes"		
1995	1999	2003
2	9	3

Table 4.15:
Number of residential lines

Number of different phone numbers	Percent
1	90.8
2	8.0
3	1.2

Table 4.16:
Households with multiple lines 1999 and 2003

Percent reporting two or more telephone numbers	
1999	2003
21	9

Table 4.17:
Residential fax or computer lines

Number of additional phone lines connected to fax or computer	Percent
None	62.2
1 fax/modem line	35.1
2 fax/modem lines	2.7

Table 4.18:
Things liked most about local telephone service--residential

	Percent
Reliability	26.4
No answer	17.5
Good customer service	13.2
Good plans/calling plans	9.5
Low cost	9.5
Convenient/local	9.2
Nothing	14.7

Long-term contracts are a tool that companies use to reduce “churn,” or the rate at which current customers leave the company’s service. Contracts for telephone service are more common for businesses than residents, and the nonresidential survey asked a question to determine how common. Less than one fifth of all nonresidential respondents (16.5%) suggested having a contract to purchase voice and fax telephone service for a period of time. A large majority (81.3%) did not.

Table 4:19
Things liked least about local telephone service--residential

	Percent
High cost	27.4
No answer	26.2
Poor plans/calling plans	9.7
Poor customer service	5.5
No other choice	3.0
Not reliable	2.7
Nothing	25.4

Reports in the media indicate that the growth in telephone lines as leveled off its historical upward path. The residential survey asked questions about additional lines. While only a few respondents (3.0%) expect to have an additional phone line installed in the next six months, a large majority (96.3%) does not. And, three respondents (0.7%) did not know or were unsure. Further, only 2.5% expect to be dropping a phone line installed at their residence, while a large majority (96.8%) does not. The level of interest in second lines has changed significantly since the 1999 survey. Tables 4.14 and 4.16 show that not only have the number of households with multiple telephone numbers dropped by more than half, but the level of interest in obtaining additional lines in the near future has returned in 2003 to a level comparable to that of 1995 after a spike in 1999. Quite possibly 1999 represents a point near the peak of demand for second lines for use with dial-up access to the Internet.

In an open ended-format question, researchers also asked respondents what they liked most about their local telephone service. Table 4.18 summarizes the results. Further, respondents were asked what they liked least about their local telephone service. Table 4.19 summarizes the results.

LOCAL CALLING AREAS

Vermont last expanded the size of its local calling areas in the late 1990s. With long distance prices having fallen and a range of companies—wireless companies, local telephone companies, and VoIP telephone providers—offering plans with large or unlimited “buckets” of long distance minutes at no additional charge, the surveys asked Vermonter how they felt about their local calling areas.

Just over three quarters of residents interviewed (76.1%) suggested being satisfied with the size of their local calling area, while one fifth (20.9%) indicated not being satisfied. A few (3.0%) noted not knowing, or being unsure. (See Figure 4.3.) This figure is essentially unchanged from the PSD’s survey in 1999. More than three quarters of residential respondents (76.1%) reported being very (54.4%) or somewhat (21.7%) interested in having the whole state as their local calling area, while 24.0% noted being not very interested (12.0%), or not interested at all (12.0%). In the nonresidential survey, just over two thirds of respondents (67.3%) reported being very (50.1%) or somewhat (17.2%) interested in

Figure 4.3:
Residential users satisfied with local calling area

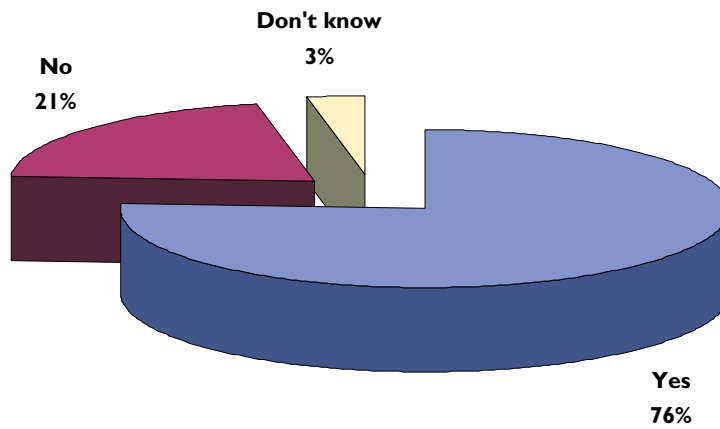


Figure 4.4:
Residential users interested in having the whole state as local calling area

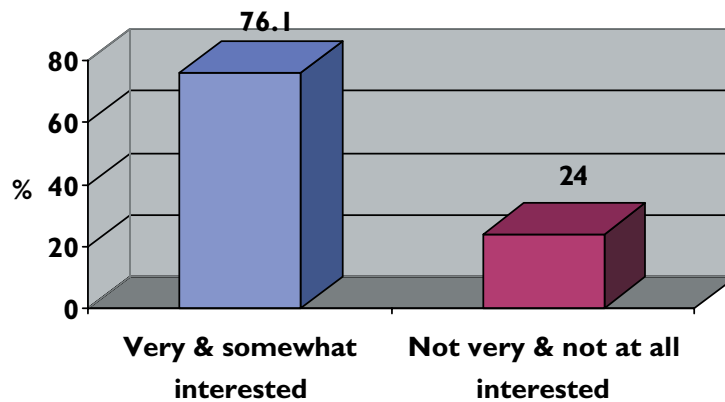


Figure 4.5:
Nonresidential interest in having the whole state as local calling area

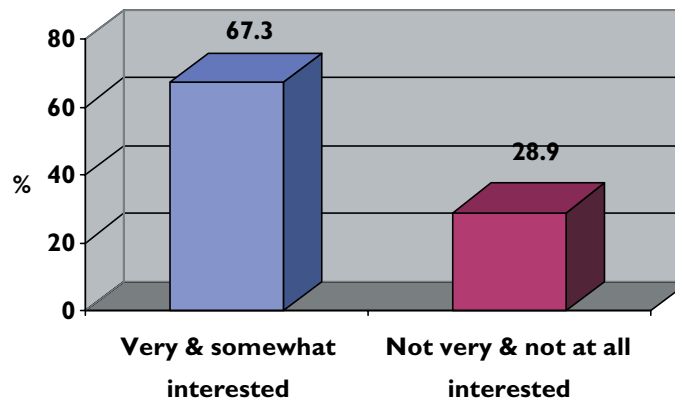


Table 4.20:
Residential willingness to pay to have
whole state as local calling area

Among those saying they would pay more

Amount more per month per line willing to pay	Percent	Cumulative
\$9	18.3	18.3
\$6	2.3	20.6
\$5	22.3	42.9
\$4	5.1	48.0
\$3	4.6	52.6
\$2	9.7	62.3
\$1	10.3	72.6
\$0.50	8.6	81.2
Nothing	5.1	
Don't Know	13.7	

Table 4.21:
Non-residential willingness to pay to have
whole state as local calling area

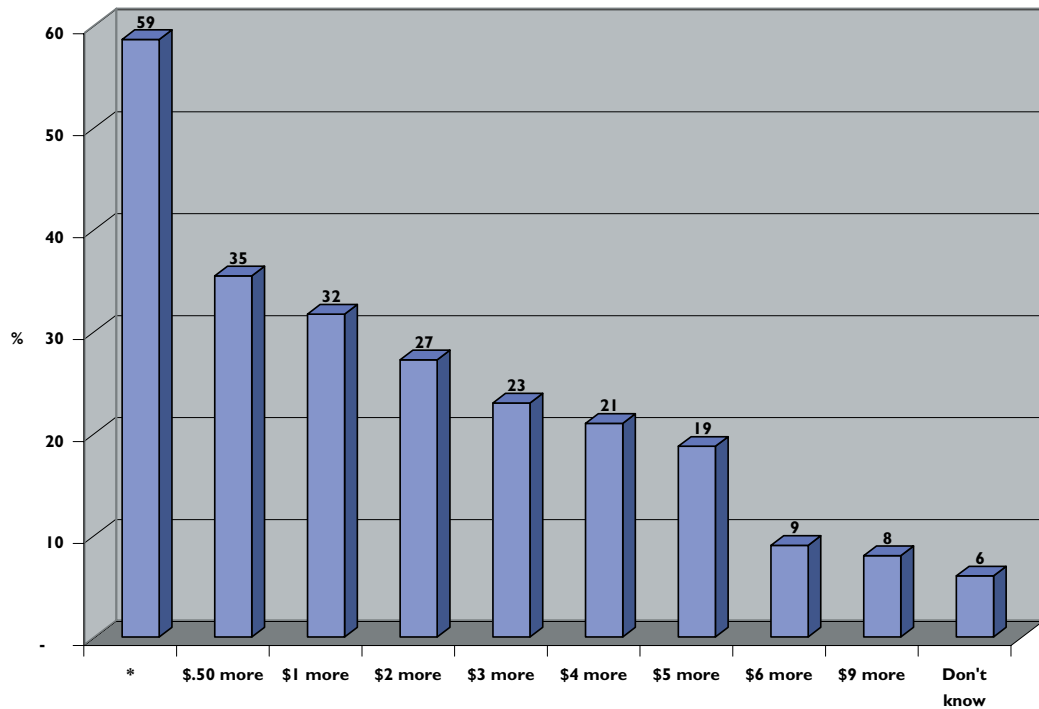
Among those saying they would pay more

Amount more per month per line willing to pay	Percent	Cumulative
\$9	23.2	23.2
\$6	10.5	33.7
\$5	13.8	47.5
\$4	5.5	53.0
\$3	2.8	55.8
\$2	5.0	60.8
\$1	4.4	65.2
\$.50	5.0	70.2
Nothing	6.1	
Don't know	23.2	
Refused	0.6	

having the whole state as their local calling area. More than a quarter (28.9%) noted being not very interested (7.0%), or not interested at all (21.9%).

Almost one half (47.9%) of residents interested in having the whole state as their local calling area, said they would be willing to pay more to have it happen. Just over two fifths (42.6%) would not. 9.5% suggested not knowing or being unsure. One half (49.8%) of nonresidential respondents interested in having the whole state as the local calling area would be willing to pay more to have this happen. Just over one third (36.5%) would not, and 13.7% suggested not knowing or

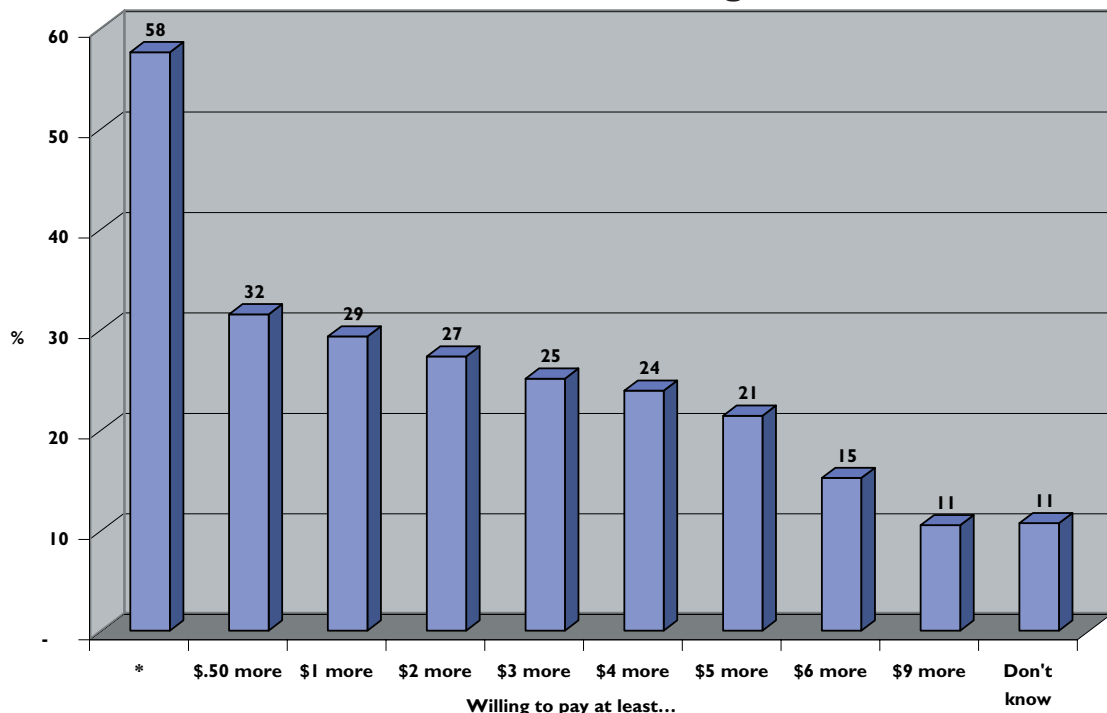
Figure 4.6:
Residential users willing to pay more to have whole state as local calling area



Willing to pay at least...

*Not interested, not very interested, or interested but not willing to pay extra

Figure 4.7:
Non-residential users willing to pay more to have whole state as local calling area



Willing to pay at least...

*Not interested, not very interested, or interested but not willing to pay extra

being unsure. Researchers asked those respondents willing to pay more how much more per month, per line, they would be willing to pay to have the whole state as their local calling area. Table 4.21 summarizes the nonresidential results and Table 4.20 summarizes the residential results as collected. Figures 4.6 and 4.7 aggregate the responses for all those interviewed, both those who were interested in having the state as their local calling area and those who were not. These tables suggest that solid majorities of Vermonters on both the residential and non-residential sides do not have a great interest in the whole state as their local calling area if it will raise their local rate, although a minority were willing to pay significantly more.

TELEPHONE SERVICE QUALITY EXPECTATIONS

Researchers presented respondents with the following question: “If you need to speak to a telephone company representative, how long are you willing to wait on the telephone to speak to someone, before you think the delay is unacceptable?” Table 4.22 summarizes the residential results, and Table 4.23 summarizes the nonresidential results

Respondents were presented with the following question: “If you report a telephone line in need of repair, how long are you willing to wait to have it repaired, before you think the delay is unacceptable?” Table 4.24 shows the results for this question from the residential survey and Table 4.25 depicts results from the nonresidential survey.

All residents interviewed were presented with the following question: “If you request a new or additional line, how long would the telephone company need to take to install the line, before you thought that the delay was unacceptable?” (See Table 4.26.) All nonresidential respondents were presented the following question: “Suppose that your organization needs an additional line installed as soon as possible. After you call to request the line, how long would the telephone company need to take to install the line, before you thought that the delay was unacceptable?” (See Table 4.27.)

Table 4.22:
Residential call answering expectations

Minutes willing to wait on the phone to speak to a representative	Percent	Cumulative
More than 30 minutes	0.2	0.2
25.1 to 30 minutes	0.2	0.4
20.1 to 25 minutes	0.2	0.6
15.1 to 20 minutes	0.5	1.1
10.1 to 15 minutes	2.0	3.1
5.1 to 10 minutes	8.3	11.4
1.1 to 5 minutes	63.8	75.2
Up to 1 minute	19.5	94.7
Don't Know	5.0	
Refused	0.5	

Table 4.23:
Nonresidential call answering expectations

Minutes willing to wait on the phone to speak to a representative	Percent	Cumulative
More than 10 minutes	0.3	0.3
5.1 to 10 minutes	3.2	3.5
2 to 5 minutes	65.4	68.9
Up to 1 minute	27.9	96.8
Don't know	3.2	

Table 4.24:
Residential repair expectations

How many hours willing to wait for phone repairs	Percent	Cumulative
1 Week	1.5	1.5
4 Days	0.2	1.7
3 Days	4.0	5.7
2 Days	12.2	17.9
1 Day	45.4	63.3
15.1 to 23 hours	0.2	63.5
10.1 to 15 hours	4.8	68.3
5.1 to 10 hours	2.2	70.5
1.1 to 5 hours	10.7	81.2
Up to 1 hour	10.0	91.2
Don't Know	8.5	
Refused	0.2	

Table 4.25:
Nonresidential repair expectations

How many hours willing to wait for phone repairs?	Percent	Cumulative
24 Days	0.2	0.2
7 Days	0.2	0.4
3 Days	2.0	2.4
2 Days	6.2	8.6
1 Day	46.1	54.7
15.1 to 23 hours	0.4	55.1
10.1 to 15 hours	4.5	59.6
5.1 to 10 hours	4.5	64.1
1.1 to 5 hours	20.4	84.5
Up to 1 hour	12.5	97.0
Don't Know	2.7	

Table 4.26:
Residential installation expectations

Days willing to wait for installation	Percent	Cumulative
6 months	0.2	0.2
5 months	0.2	0.4
2 months	0.2	0.6
1 month	0.2	0.8
2 weeks	6.2	7.0
1 week	28.4	35.4
6 days	0.2	35.6
5 days	3.2	38.8
4 days	3.2	42.0
3 days	10.0	52.0
2 days	15.2	67.2
1 day	11.4	78.6
Less than a day	5.7	84.3
Don't Know	12.7	
Refused	2.5	

Table 4.27:
Nonresidential installation expectations

Days willing to wait for installation	Percent	Cumulative
30 days	0.2	0.2
28 days	0.7	0.9
21 days	0.2	1.1
14 days	6.0	7.1
10 days	1.0	8.1
7 days	27.4	35.5
6 days	0.2	35.7
5 days	5.0	40.7
4 days	3.5	44.2
3 days	14.2	58.4
2 days	17.5	75.9
1 day	7.0	82.9
Less than a day	8.7	91.6
Don't know	8.0	
Refused	0.2	

WIRELESS SERVICE

Wireless subscription rates have grown in Vermont over the past several years, as they have elsewhere in the U.S. and the world. Just over two fifths (44.1%) of nonresidential respondents reported that their organizations are currently subscribed to a wireless phone service, while more than half (55.9%) are not. Wireless phones are also not reserved for business use in Vermont. Household subscribership levels were about the same as nonresidential subscribership levels. Almost half of all residents interviewed (45.6%) reported someone in their household subscribing to a wireless telephone service. Of this group, a majority (85.2%) indicated personally using a wireless telephone, while 14.8% do not. The percentage of households that are subscribed to wireless telephone

Figure 4.8:
Vermont organizations subscribed to a wireless service

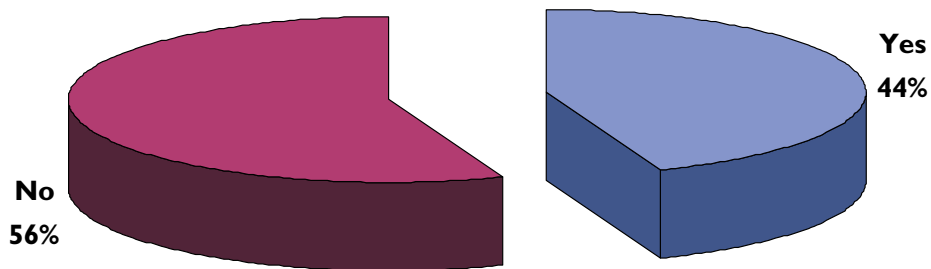


Figure 4.9:
Residential wireless adoption

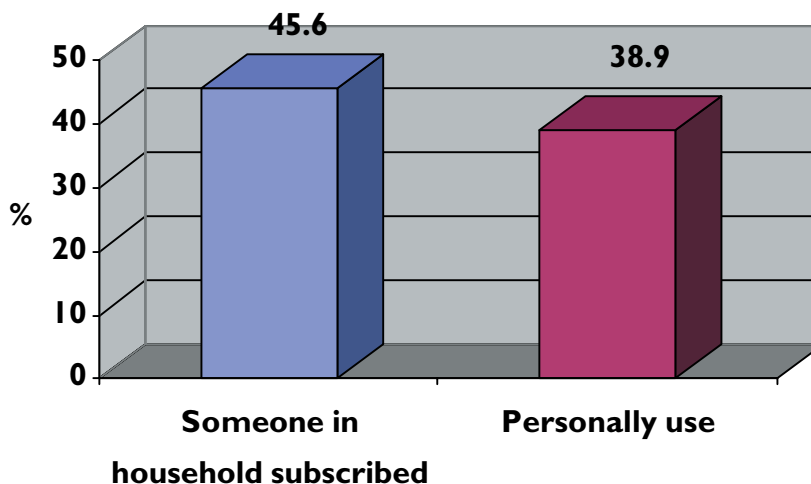


Table 4.28:
Percentage of households subscribing to wireless service 1995-2003

1995	1999	2003
11	27	46

service has grown over time and soon a majority of households are likely to have at least one wireless phone. Table 4.28 shows how wireless subscribership has grown since 1995, increasing about four percentage points every year on average. Not surprisingly, wireless subscribership is linked to income. While a majority (51.0%) of households with incomes between \$35,000 and \$75,000 and a large majority (71.7%) of households with incomes above \$75,000 subscribed to wireless, only 32.6% of households with incomes below \$35,000 subscribe to wireless service.

Respondents whose households did not subscribe to a wireless service (54.1%) were asked a couple of questions regarding wireless telephone service. When asked to provide the reasons their households did not subscribe to wireless telephone service, more than a half (52.8%) noted not needing it, while 20.2% indicated the service was too expensive. Other reasons included either not wanting one (12.4%) or that coverage/reception

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was bad (11.9%). Almost one fifth of residential respondents in a household without a wireless phone (18.3%) suggested being very (5.5%) or somewhat (12.8%) likely to acquire a wireless phone in the next year. More than three quarters (79.3%) indicated being somewhat unlikely (17.4%) or not at all likely (61.9%) to acquire a wireless phone in the next year. A few respondents (2.3%) did not know or were unsure.

Unicel and Verizon remain the wireless companies with the largest blocks of Vermont customers. Respondents having someone in their household who use wireless telephone (45.6%), were asked to name their household's wireless service provider. Respondents whose organizations were subscribed to a wireless service (44.1%) were also asked to name their current wireless service provider. Table 4.29 holds all results as collected.

Few wireless users in Vermont have a good impression about the extent of wireless coverage in Vermont. Respondents with someone in their household using a wireless phone were presented with the following statement: "An area in Vermont is said to have wireless phone coverage if you can make and receive wireless calls in that area. Some areas in Vermont have wireless

Figure 4.10:
Why does your household not subscribe to wireless service?

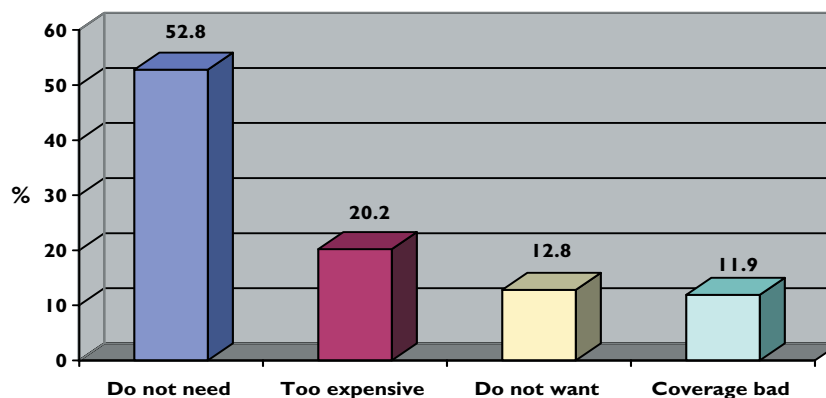


Table 4.29:
What company is your current wireless provider?

	Percent nonresidential	Percent residential
Unicel	49.2	41.0
Verizon	38.4	31.7
US Cellular	2.8	5.5
Nextel	2.8	2.2
AT&T	2.3	2.2
Sprint PCS	0.6	3.3
Trac Phone	--	3.3
Don't Know	2.8	8.2
Other	0.6	1.6
Refused	0.6	1.1

Table 4.30:
Impressions about wireless coverage

	Nonresidential Percent	Residential percent
Excellent	4.0	0.0
Good	18.6	24.0
Fair	40.7	35.5
Poor	35.0	34.4
Don't Know	1.7	6.0

Figure 4.11:
Residents agreeing wireless phones should be as reliable as regular phones

Among households with a wireless user

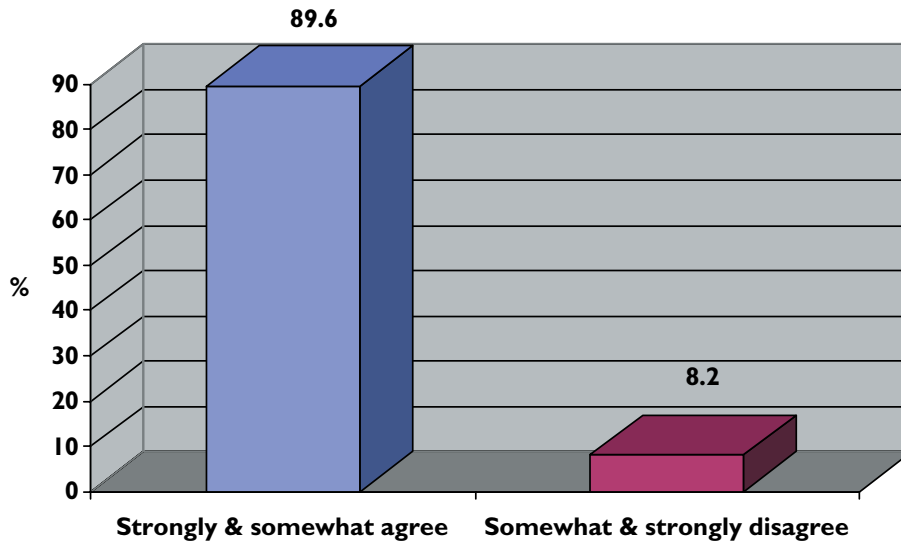
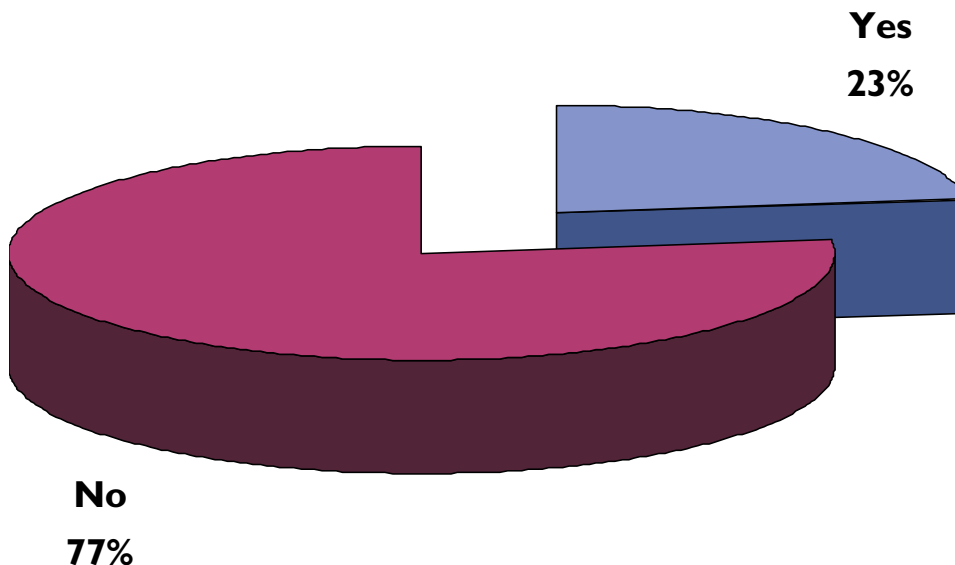


Figure 4.12:
Considered discontinuing regular phone service to use only wireless

Among households with a wireless user



phone coverage and other areas do not.” Only one quarter (24.0%) rated the extent of wireless coverage in Vermont as good (24.0%), while almost three quarters (69.9%) gave it a rating of fair (35.5%) or poor (34.4%). None rated it as “excellent.” More than one fifth of nonresidential respondents (22.6%) rated the extent of wireless coverage in Vermont as excellent (4.0%) or good (18.6%), while three quarters (75.7%), gave it a rating of fair (40.7%) or poor (35.0%).

While residents as a whole were not impressed with the extent of wireless coverage, they did have expectations about how reliable the service should be. A majority (89.6%) strongly (59.6%) or somewhat (30.1%) agreed with a statement suggesting that in those areas where wireless phones are used frequently, they ought to be as reliable as regular telephone lines. Less than ten percent (8.2%) indicated disagreeing somewhat (6.6%) or strongly (1.6%) with the same statement.

Respondents who had someone in their household that use wireless telephones (45.6%) were presented with the following statement: “Some households who have wireless phone service have discontinued their regular phone service – the service that is connected to the wall in your house.” Less than a quarter (23.0%) have considered discontinuing their regular phone service

and using only their wireless phone, while more than three quarters (77.0%) have not. Just under a third (31.1%) reported using their wireless phone much more (18.6%), or somewhat more (12.6%) often than their regular telephone, when making long distance calls from home. More than two thirds (68.9%) indicated using their phones sometimes, but less often than regular (27.9%) or never (41.0%), when making long distance calls from home.

An important consideration when thinking about consumers' potential willingness to substitute a wireless phone or an Internet phone service for conventional telephone service is the value they place on a phone that doesn't depend on batteries or home electric service. The use of cordless phones in the home has grown significantly in recent years. Cordless phones, while typically used with conventional phone service, require electric power and can be impacted by the availability of service in a power outage. Just over one fifth of all respondents (21.7%) suggested all of the phones in their household were cordless. Less than two-thirds (64.1%) noted only some of the phones in their households were cordless. And 14.2% indicated not having any cordless phones.

All households, both those with wireless services and those without, were

Figure 4.13:
Frequency of use of wireless phone for long distance

Among households with a wireless phone user, compared to regular phone use

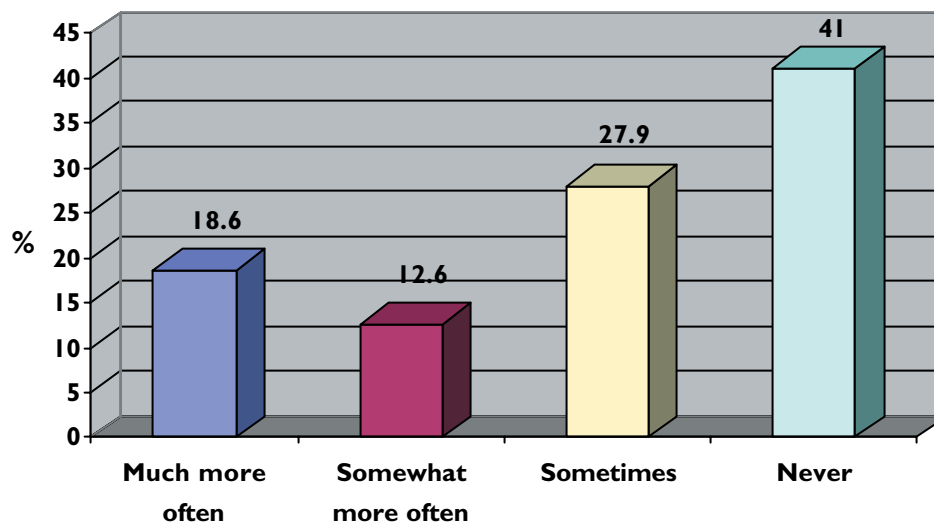


Figure 4.14:
Number of phones in household that are cordless

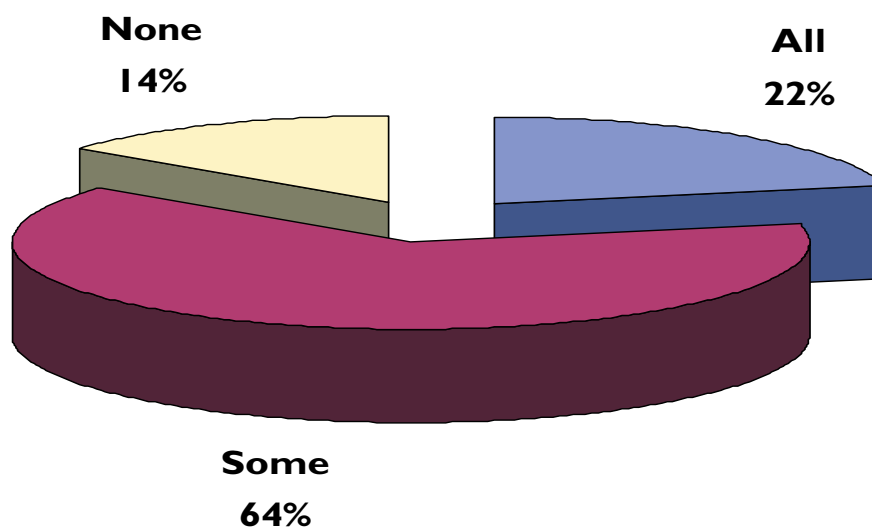


Figure 4.15:
Importance of better wireless service

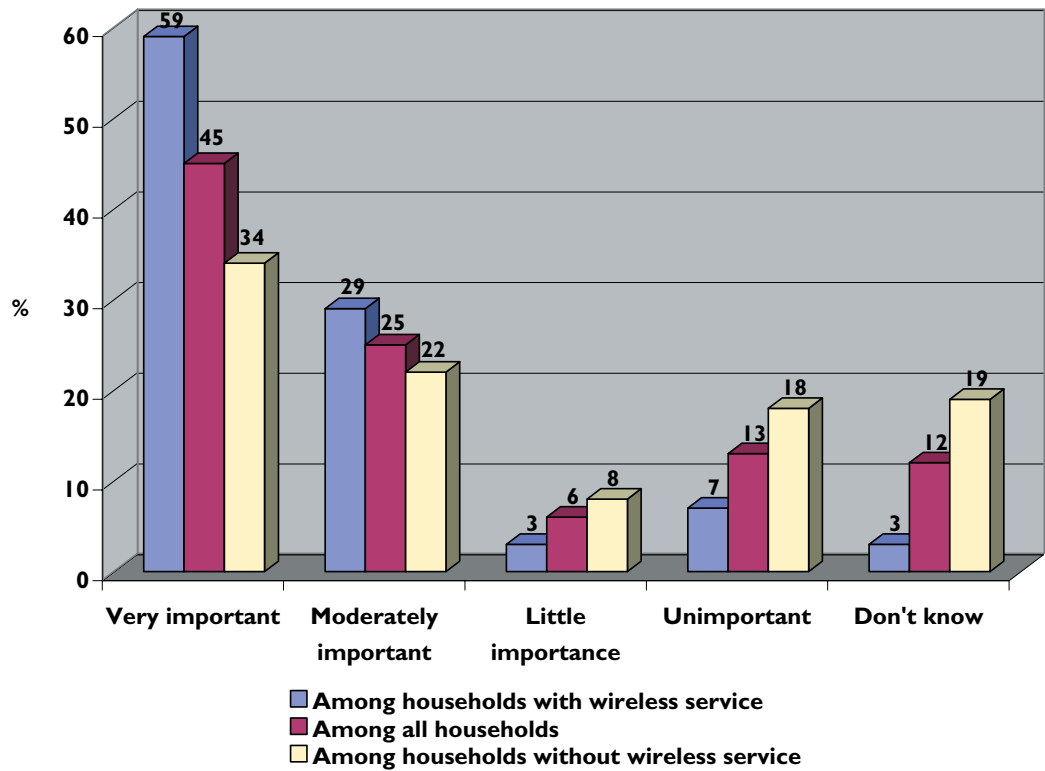
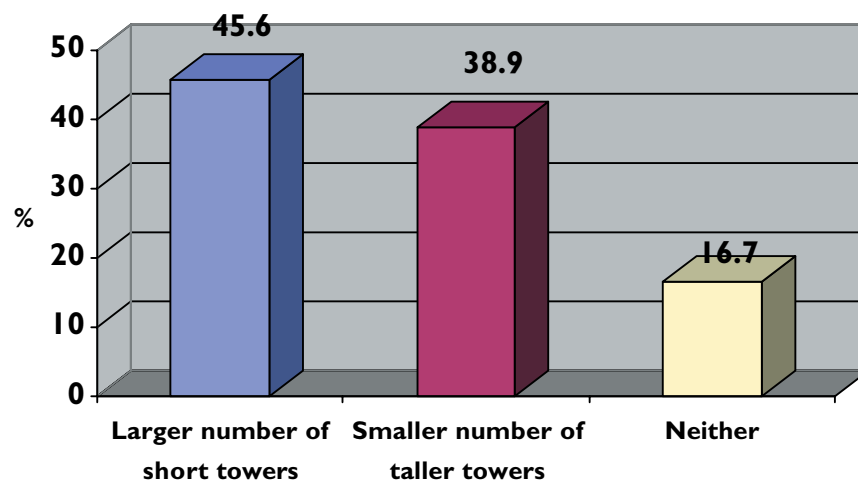


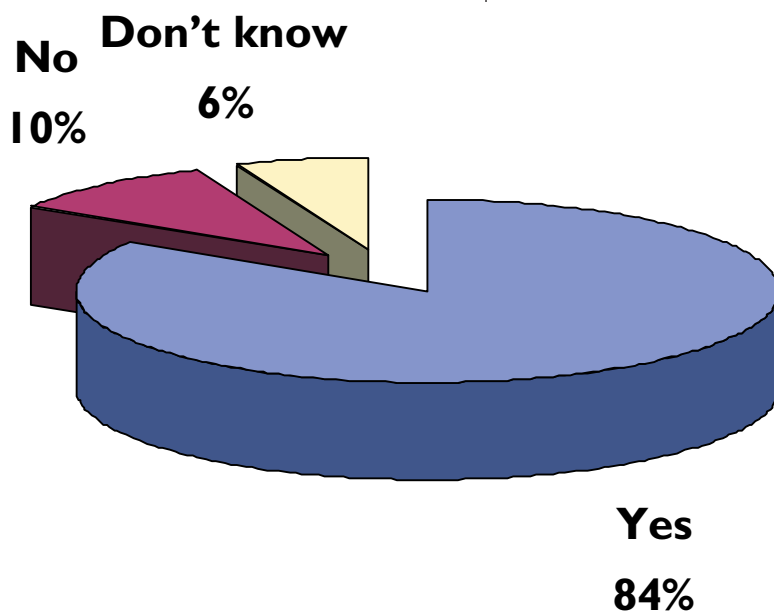
Figure 4.16:
Residents preferring large number of small towers vs. small number of large towers



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asked questions about the importance of wireless services and about tower siting issues. More than two thirds of all residents interviewed (69.8%) would describe the need in Vermont for better wireless phone service as very (45.1%) or somewhat (24.7%) important. Less than one fifth (18.4%) would describe it as having little importance (5.7%) or being unimportant (12.7%). Respondents from households that subscribed to wireless service felt even more strongly about the issue—87.4% felt that better wireless service was either very important (59.0%) or moderately important (28.4%). Even a majority of respondents from households that did not subscribe felt that the issue was important, either very important (33.6%) or moderately important (21.7%).

Figure 4.17:
Support more towers in community for better 2-way radio for emergency services?



Tower height and the number of towers for wireless services has been a matter of public controversy in the past. Two strategies to improve wireless coverage are to build taller towers to give signals greater range, or to locate a greater number of towers. A larger number of shorter towers might provide similar coverage to a smaller number of larger towers. The residential survey asked Vermonters to identify which of the two alternatives they found preferable. While 30.2% of respondents would prefer a large number of short towers to improve wireless service, 29.2% would prefer a small number of tall towers. One sixth (16.7%) stated without prompt that they would prefer neither. And 23.9% did not know or were unsure. While a large majority of respondents (84.0%) would support more towers in the community to improve two-way mobile radio communications for police, ambulance, or fire services if they were needed, 10.0% of residents interviewed would not.

THE INTERNET

Both the residential and nonresidential surveys asked a number of questions regarding Internet access and the use of Internet applications. A number of these questions corresponded to questions asked in prior surveys, presenting a picture of changes over time.

Table 4.31:
Residents' frequency of Internet use

Last use of the internet?	Percent
Today	46.4
Last 7 days	20.2
last 30 days	3.7
Last 3 months	1.0
Last 6 months	2.5
last year	0.2
> 1 year	1.7
Never	23.7
Don't know	0.5

Figure 4.18:
Residents who have Internet access at home

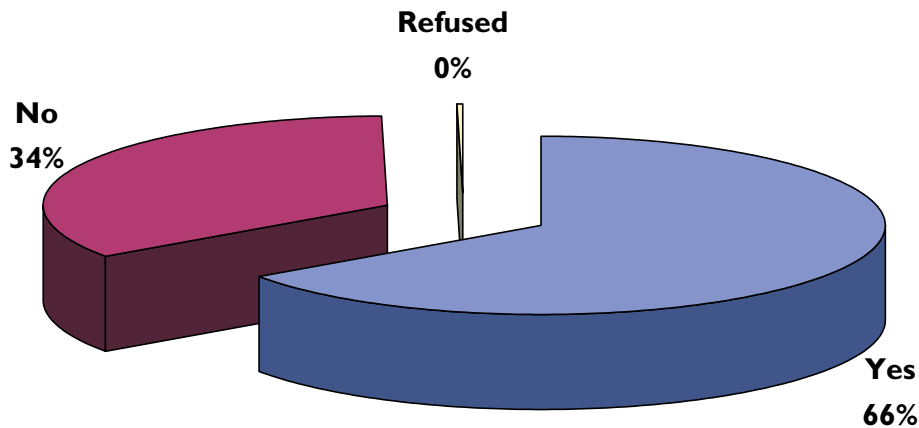


Figure 4.19:
Organizations who have Internet access

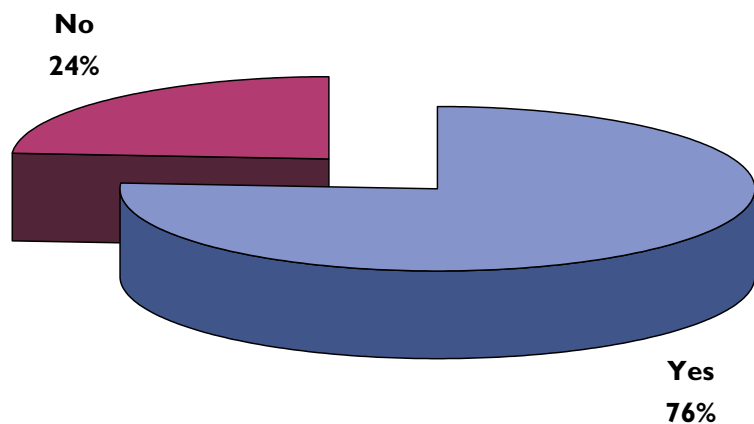
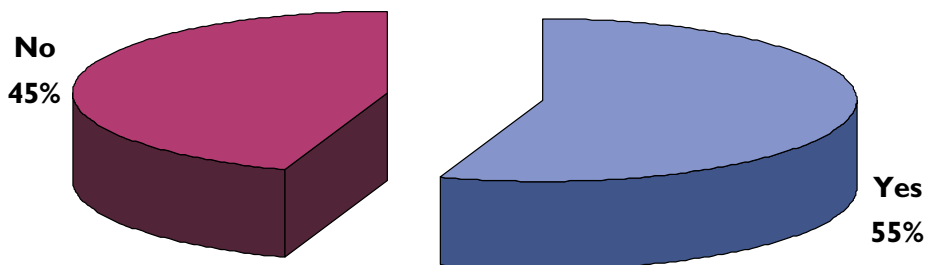


Figure 4.20:
Organizations who currently have an Internet website
Among those with Internet access



INTERNET ACCESS

Not surprisingly, Internet use in Vermont is up among both households and nonresidential users. In the 1999 residential survey, researchers asked respondents if they had ever used e-mail and if they had ever used the Internet for other purposes. Just under two-thirds answered that they had ever done these things (60% and 61%, respectively). In the 2003 survey, higher percentages of respondents answered that they not only had used the Internet at one time, but also were frequent Internet users or had access in their homes. Just under two thirds of all residents interviewed in 2003 (65.3%) had Internet access at home, while 34.4% did not. Regardless of whether or not the respondent had Internet access in the home, researchers asked a series of questions to determine respondents' frequency of use of the Internet. All respondents were asked when, if ever, was the last time they used the Internet. Table 4.31 holds results as collected. Two-thirds had used the Internet at least once in the last week, and nearly half had used it the day of the interview.

A greater number of nonresidential respondents stated that their organizations were connected to the Internet. More than three quarters of respondents (76.1%) indicated their organizations have access to the Internet. Less than a quarter (23.9%) did not. In the 1999 survey, 56% had Internet service. More

Table 4.32:
ISPs' shares of customers

Percent of residential customers		Percent of nonresidential customers	
AOL	22.9	SoVerNet	14.4
SoVerNet	11.8	Adelphia Cable	12.8
Adelphia Cable	11.5	AOL	11.5
Earthlink	8.4	Earthlink	8.8
United Online (Juno/NetZero/ BlueLight)	5.0	Verizon	6.2
Power Shift Online	4.2	VTel Internet	4.6
Vtel Internet	4.2	Green Mountain Access	4.3
Verizon	3.8	Vermont Link.Net	3.3
Green Mountain Access	3.8	Global.net	2.6
AT & T	2.3	Lightship	2.6
Global.net	2.3	Charter Communications	2.3
Innevi	1.9	Power Shift Online	2.3
MSN	1.9	Valley Net	2.3
Kingdom Connection	1.5	Kingdom Connection	1.6
Charter Communications	1.1	ABS / Telcove	1.6
GovNet	0.8	United Online (Juno/NetZero/ BlueLight)	1.6
Trans Video	0.8	GovNet	1.3
Vermont Link.Net	0.8	MSN	1.3
ABS/Telcove	0.4	AT&T	1.0
Shoreham	0.4	TDS Net	1.0
TDS Net	0.4	Stowe Cable	0.7
UU Net	0.4	Shoreham	0.3
Valley Net	0.4	WorldCom	0.3
Other	6.5	Other	6.2
Don't Know	1.5	Don't know	4.6
Refused	1.1	Refused	1.0

than half (55.4%) of the organizations with access to the Internet had a website. This is similar to the proportion in the 1999 survey, when half of the organizations with Internet access had a web site.

The market for providing Internet access in Vermont is split among a large number of companies. Respondents with Internet access were asked to name their Internet service provider. Table 4.32 portrays the results. America On-line clearly had the greatest market share among homeowners in a heavily divided field. Among the nonresidential organizations, SoVerNet and Adelphia Cable were the most frequently cited Internet Service Providers (ISPs) among an even

Figure 4.21:
Residents likely to upgrade to faster Internet connection in the next year

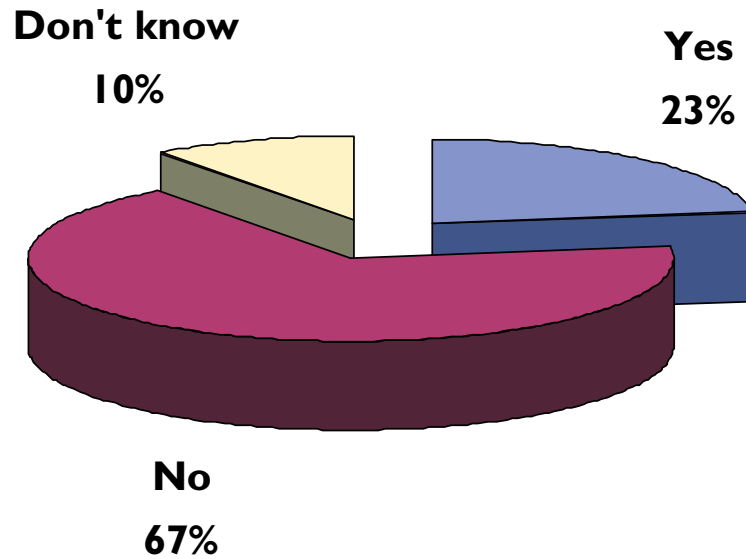
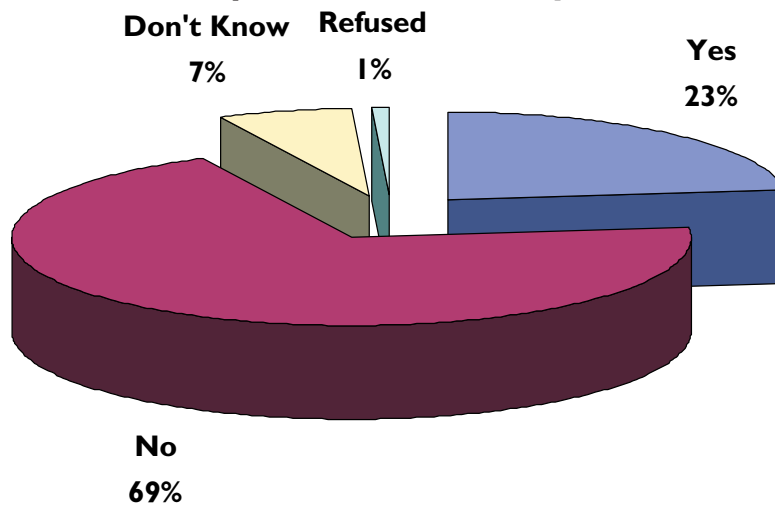


Figure 4.22:
Residents without home Internet access likely to acquire it in the next year



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more heavily divided field. The appearance of Adelphia Cable near the top of this list is notable because Adelphia's cable modem service was originally only marketed as a residential offering, although now it is available as a business service as well. The survey results may reflect the extent to which the residential and small business markets are using similar types of broadband Internet services.

While 22.9% of the households said it would be likely they will upgrade to a faster Internet connection at home in the next year, two thirds (66.8%) will not. Ten percent (10.3%) did not know or were unsure. Just under one quarter of households without Internet access at home (23.0%) suggested being likely to acquire Internet access at home in the next year, while 69.8% said they still would not. Respondents from organizations with Internet access, were also asked if they planned to upgrade their Internet access service to a faster service. Table 4.33 portrays the results as collected. Respondents from organizations with no Internet service access (23.9%) were asked if they planned to obtain Internet access service in the future. Table 4.34 shows the results obtained.

The extent to which homes and businesses are adopting broadband Internet connections is an important question. Respondents with Internet access at home (65.3%) were asked for the type of Internet connection they had. Table 4.35 holds the results. About a quarter of Vermont homes that connect to the Internet use broadband connections, and the broadband penetration rate exceeds 15% of all Vermont homes. Cable modem connections are somewhat more common than Digital Subscriber Line (DSL) connections.

A higher proportion of nonresidential Internet users rely on a broadband connection, about half. Respondents from organizations with Internet access (76.1%) were asked for the primary way that their organizations connected to the Internet. Table 4.36 holds the results. The most common broadband means of connecting by far were still DSL and cable modems, in roughly equal proportions.

Respondents from organizations with Internet access were read a list of methods to connect to the Internet and asked if those methods were available in the area they were located. Table 4.37 summarizes the results as collected. It is not reasonable to expect that these perceptions are in fact accurate—most users do not have detailed information about the availability of the full range of telecommunications services in their area. In fact, there are some notable errors in perception. For example, T-1 is a service that is essentially universally available, although at a price that may discourage many users. It is useful to understand what users perceive their choices to be.

Table 4.33:
Nonresidential plans to upgrade Internet access

Plans to upgrade Internet access service to a faster service?	Percent
Next 6 months	9.5
Next year	9.5
Next 2 years	5.6
No plans to upgrade	68.2
Don't know	7.2

Table 4.34:
Nonresidential plans to obtain Internet access service

Do you plan to obtain an Internet access service?	Percent
Next 6 months	12.5
Next year	12.5
Next 5 years	6.3
No plans for service	63.5
Don't know	4.2
Refused	1.0

Table 4.35:
Type of Internet connection--residential

Type of Internet connection	Percent
Dial-up	71.0
Cable modem	15.3
DSL	10.3
Satellite	0.8
Wireless	0.4
Web TV	0.4
Don't know	1.5
Refused	0.4

Table 4.36:
Type of Internet connection--nonresidential

Type of Internet connection	Percent
Dial-up modem	46.6
DSL	20.7
Cable Modem	19.0
T1 or DS1	4.9
Satellite	1.6
Dial-up ISDN	1.6
Other wireless	1.3
Fractional T1 or DS1	0.7
Frame relay	0.3
Other type	0.3
Don't know	3.0

Table 4.37:
Perceived availability of Internet access--nonresidential

Is method available in the area where you are located?	Percent		
	<i>Yes</i>	<i>No</i>	<i>Don't Know</i>
Cable modem	57.7	22.6	19.7
DSL	53.1	23.3	23.6
Satellite	43.0	14.1	43.0
Wireless	27.5	25.2	47.2
T1 or DS1	23.9	16.1	60.0
ISDN	22.0	23.6	54.4
Frame relay	8.9	13.4	77.7

Table 4.38:
Reasons for not having Internet connection at home

	Percent
Dislike at home	24.5
No computer	19.4
Too expensive	13.7
Do not use	10.8
Use at work	3.6
Use at other place	3.6
Do not know how	2.9
Family concerns	2.9
Not available	2.2
Don't know	5.0
Refused	10.0

Table 4.39:
Reasons for not using the Internet recently

	Percent
No equipment	40.0
No interest	20.0
Do not like computers	15.2
Do not know how	15.2
Equipment too expensive	6.7
Monthly charges	1.9
Never heard of	1.9
No time to learn	1.9
Phone charges	1.0
Don't know	4.0

Table 4.40:
Home Internet access by household income

All respon- dents	Less than \$35,000	\$35,00- \$75,000	\$75,000 or more
65.3	48.1	70.7	94.3

For those homes without Internet access, the surveys inquired as to why they did not have it. Table 4.38 summarizes the results. About a quarter of respondents stated that they disliked having an Internet connection at home or had family concerns about access. About a third stated that they had no equipment for access, or they thought it was too expensive. Residential respondents who had not used the Internet in the last six months were also asked why they had not used the Internet recently. Table 4.39 shows the results. In response to this

Table 4.41:
Reasons for not subscribing to a faster Internet access service--nonresidential

Most important reason for not subscribing to a faster Internet service?	Percent
Not needed	34.1
Not available	25.9
Too expensive	16.7
Too small	13.1
Satisfied with current service	3.9
Other	2.0
No time to check	2.0
Lack knowledge	1.0
Provider hard to deal with	0.7
Don't know	0.7

Table 4.42:
What Vermonters do on the Internet

Used Internet in the past 4 weeks for...	Percent		
	Yes	No	Don't Know
E-mail	90.1	8.8	1.1
Shopping	61.8	37.0	1.1
News reports	60.3	38.5	1.1
Health/medical information	47.3	51.5	1.1
Hobbies	45.8	53.1	1.1
Working from home	38.5	60.3	1.1
Pay bills / managing finances	36.6	62.2	1.1
Playing games	33.2	65.6	1.1
Chat or Instant Message	30.5	68.3	1.1
Internet radio	20.2	78.6	1.1
Downloading music	17.6	80.5	1.9
Something else	16.8	80.9	2.3
Watching/downloading videos	9.5	89.3	1.1
Internet phone calls	5.3	93.5	1.1

question, the greatest number of people responded that they either lacked the equipment to do so or a computer, specifically. The survey suggested that this could be linked to income. There were great differences in the level of home Internet access at different income levels. Table 4.40 shows these results. For upper-income households, the level of penetration of Internet access approached that of telephone service.

In an open-end format question, respondents from organizations with Internet access were asked for the most important reason their organizations did not subscribe to a faster Internet access service. Table 4.41 holds the results as collected. Among those who did not say that they didn't need one or were satisfied with their current service, the most frequently cited reasons were that the faster connections were not available or too expensive, or that the organization was too small.

WAYS VERMONTERS USE THE INTERNET

Respondents with Internet access service at home (65.3%) were read a list of Internet services, and asked if, in the last four weeks,

they had used the Internet at home for each one of these services. Table 4.42 summarizes the results as collected. Respondents who had used the Internet in the past year (73.8%) were asked how often they had visited a Vermont State Government Internet web site. Almost half (44.6%) suggested having never visited a Vermont State Government website, while two fifths (20.9%) having visited occasionally. Under one sixth (14.2%) suggested visiting frequently, and 0.3% said they did not know or were unsure.

Respondents working at organizations with Internet access were also asked a series of detailed questions about the ways their organization used the Internet. Table 4.43 summarizes the results of a question asking the percent of their employees that used e-mail at work.

More than half (57.0%) of organizations interviewed with access to the Internet indicated making business-to-business transactions over the Internet. Figure 4.23 summarizes the results. This figure has changed dramatically since the 1999 survey, when only 17% percent of organizations connected to the Internet responded in a like manner. More than one fifth (22.4%) of organizations doing business-to-business transactions over the Internet stated these transactions used digital signatures. In

Table 4.43:
Percent of employees that use e-mail at work

In organizations with Internet access

Estimated percent of employees that use e-mail at work	Percent
1 – 10 %	22.3
11 – 20	5.6
21 – 30	6.2
31 – 50	7.5
51 – 60	1.6
61 – 70	1.6
71 – 80	4.6
81 – 90	1.0
91 – 100	48.5
Don't know	1.0

Figure 4.23:
Does your organization make business-to-business transactions over the Internet?

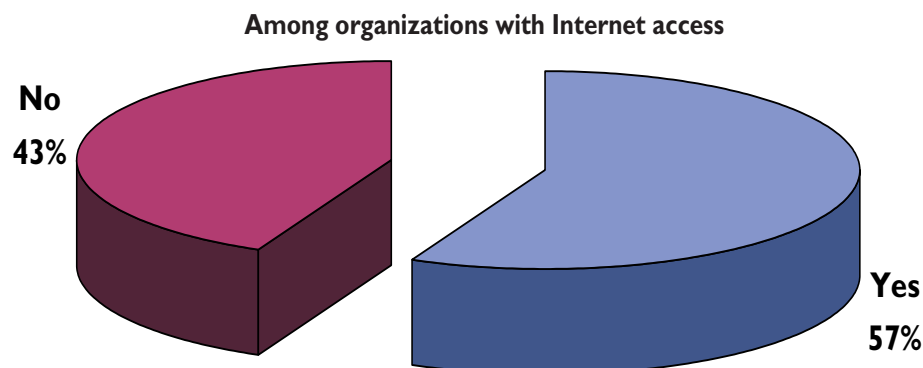


Figure 4.24:
Can customers make purchases using your site?

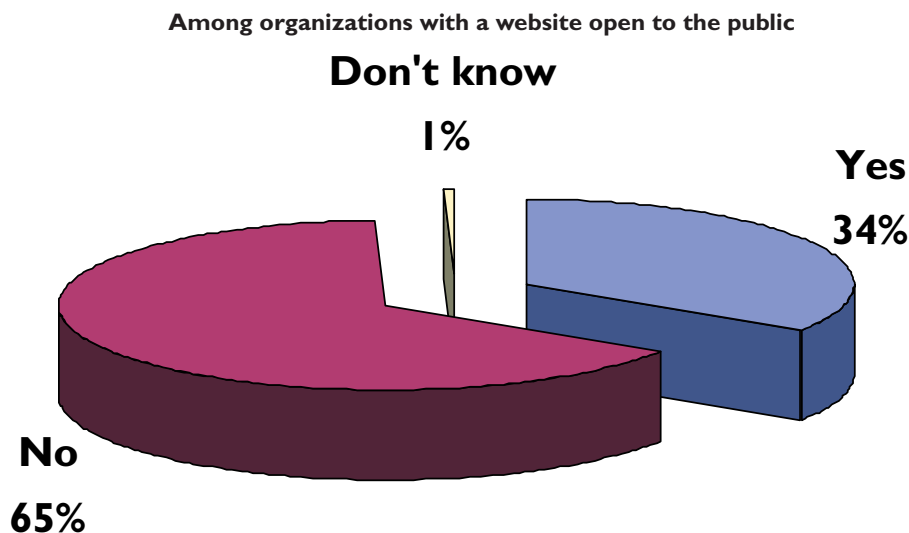


Table 4.44:
Importance of upload vs. download speeds for organizations

Is upload or updown speed more important?	Percent
Upload more important	7.9
Download more important	36.7
Equal	48.5
Don't know	6.9

Table 4.45:
Locations used the Internet in the past 12 months

	Percent
Home	83.7
Work	52.0
Friend/neighbor/relative	30.7
School or college	18.9
Library	13.9
Government office	2.0
Senior Center	1.4
Restaurant	1.0
Place of worship	0.7
Other business	3.7
Other	1.4

Table 4.46:
Interest in seeing more public Internet terminals

Does your community need more public use Internet terminals?	Percent
Yes	27.2
No	42.1
Don't Know	30.7

contrast, the 1999 survey uncovered virtually no evidence of digital signature use by organizations in Vermont.

Respondents were also interviewed about how their organizations used its website. Almost two thirds (63.9%) of organization websites are used by the public as well as by internal staff members. Just over one third (34.3%) noted their website is only used by the outside public. And a few (1.2%) indicated their website was for internal use only. More Vermont organizations are using websites to drive sales. Of those websites open for public use, just over one third (34.3%) allow customers to make purchases using the website. This is up significantly from 1999, when only 14% of respondents had a similar answer.

Many Internet access services are asymmetrical, providing greater download speeds than upload speeds while others are symmetrical. The survey explored how organizations valued upload and download speeds. Respondents from organizations with Internet access were provided with the following statement: "Internet services may provide different speeds for uploading information to the Internet and downloading information from the Internet." Almost half (48.5%) noted both upload and download speeds were equally important for their organizations. More than

one third (36.7%) suggested download was more important, and 7.9% indicated upload was more important.

One third (33.3%) of respondents who favored upload over download, indicated upload was much more important than download. Two thirds (66.7%), suggested upload was only somewhat more important than download. One half (50.0%) of respondents who favored download over upload, indicated download was much more important than upload. The other half (49.1%) noted it was only somewhat more important.

USE OF THE INTERNET OUTSIDE THE HOME

Respondents who had used the Internet in the past year (73.8%) were read a list of locations where people might use the Internet, and asked if they had used it at each location in the last twelve months. Table 4.45 depicts the results as collected.

More than a quarter of all respondents (27.2%) agreed their respective communities need more public use Internet terminals. More than two fifths (42.1%) did not. And 30.7% did not know or were unsure. Table 4.46 holds the results collected.

Researchers presented respondents with the following question: “If the computer center at one of your community schools were open to the public in the evening or weekend and offered free services, which, if any, of the following services would interest you?” Table 4.47 holds the results. These results are very similar to the results obtained from similar questions in the 1999 survey.

Table 4.47:
Interest in community Internet assistance programs

If offered for free at a community school, interested in...	Percent		
	Yes	No	Don't Know
Access to the Internet	30.7	64.3	5.0
Use of e-mail	25.2	69.8	5.0
Training/technical support	38.2	57.1	4.7
Access to online services	37.2	58.6	4.2

Table 4.48:
Reliability of nonresidential Internet access service

Frequency of service interruption with primary Internet access service?	Percent	Cumulative
Weekly	23.3	23.3
Monthly	25.6	48.9
Quarterly	17.7	66.6
Yearly	14.1	80.7
<1 per year	4.6	85.3
Never	10.5	
Don't know	4.3	

Table 4.49:
Is reliability or price more important?

Is reliability or price of Internet service more important?	Percent
Reliability more important	39.7
Price more important	12.5
Equally important	46.9
Don't know	1.0

RELIABILITY AND PRICE SENSITIVITY

In an aided open-ended format, researchers asked nonresidential respondents how often they experienced an interruption in their primary Internet access service. Table 4.48 holds the results.

Almost half (46.9%) of respondents from organizations with Internet access suggested reliability and price were equally important for their organization. Two fifths (39.7%) indicated reliability as being more important. And one eighth (12.5%) mentioned price as being more important for their organizations. Table 4.49 holds the results.

Just under half (48.8%) of respondents who favored reliability over price, indicated reliability was much more important than price. One half (50.4%), suggested reliability was only

somewhat more important than price. Just over two fifths (42.1%) of respondents who favored price over reliability, indicated price was much more important than reliability. More than half (55.3%) noted it was only somewhat more important.

A large majority (90.8%) of respondents from organizations with Internet access suggested their service was very (59.7%) or somewhat (31.1%) reliable. Less than ten percent (8.2%) noted their service was somewhat (4.9%), or very (3.3%) unreliable.

Figure 4.25:
How reliable is your organization's Internet service?

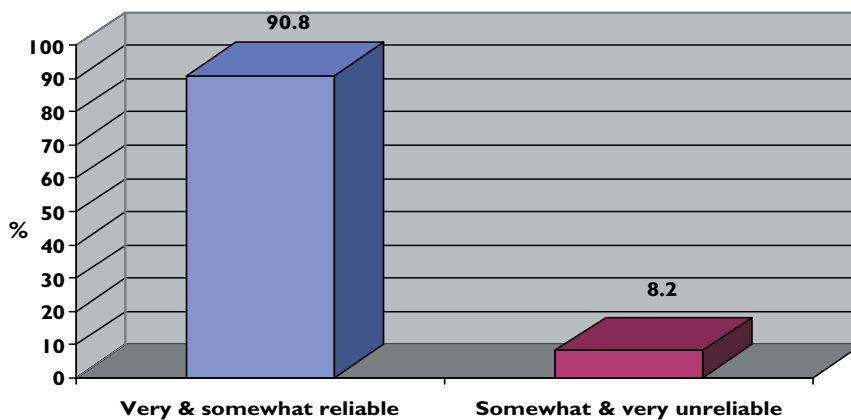
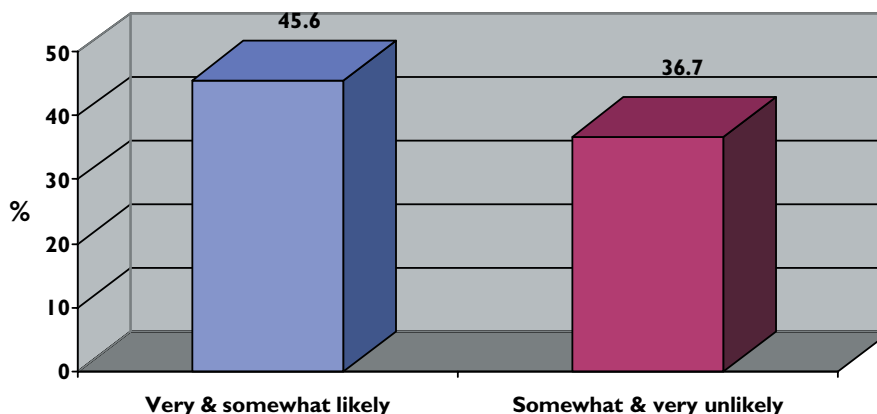


Figure 4.26:
Likelihood of joining a telecommunications buyers group



AGGREGATE BUYING

There have been a number of organizations and communities that are or have attempted to organize users into aggregate buying groups in order to obtain better telecommunications service or lower prices. The nonresidential survey asked respondents several questions about this concept. More than two fifths (45.6%) of respondents from organiza-

tions with Internet access noted being very (14.8%) or somewhat (30.8%) likely to join a telecommunications buyers group if such a group was seeking members in their community. More than one third (36.7%) said it would be somewhat (11.1%) or very (25.6%) unlikely they would join. Almost one fifth (17.7%) did not know or were unsure.

Respondents likely to join such a buying group (45.6%) were asked, in an aided open-ended format question, what benefits they would want most to obtain by joining. Table 4.50 summarizes the results.

Table 4.50:
What benefits would you most want to obtain by joining a buyers group?

	Percent
Lower prices	82.7
Higher speed service	69.8
More reliable service	54.7

TELECOMMUTING

Both surveys examined the practice of telecommuting. All nonresidential respondents were presented with the following statement: “Telecommuting means working at home with the capability to connect to your office’s computer network. A person can telecommute part-time or full time.” One fifth (19.5%) of all nonresidential respondents suggested someone in their organization (including themselves) have telecommuted in the past year. A large majority (80.0%) indicated no one in their organization had telecommuted in the past year.

One quarter (24.7%) of all nonresidential respondents indicated it was very (13.2%) or somewhat (11.5%) likely themselves or employees in their organizations will be telecommuting in the next year. Almost three quarters (72.8%) indicated it was somewhat (5.7%) or very (67.1%) unlikely anyone in their organizations will telecommute. Ten respondents (2.5%) did not know or were unsure.

The residential survey also asked about telecommuting. The survey first identified those who might be possible telecommuters. The first criterion was that the responder was a member

Figure 4.27
Has anyone at your company telecommuted in the past year?

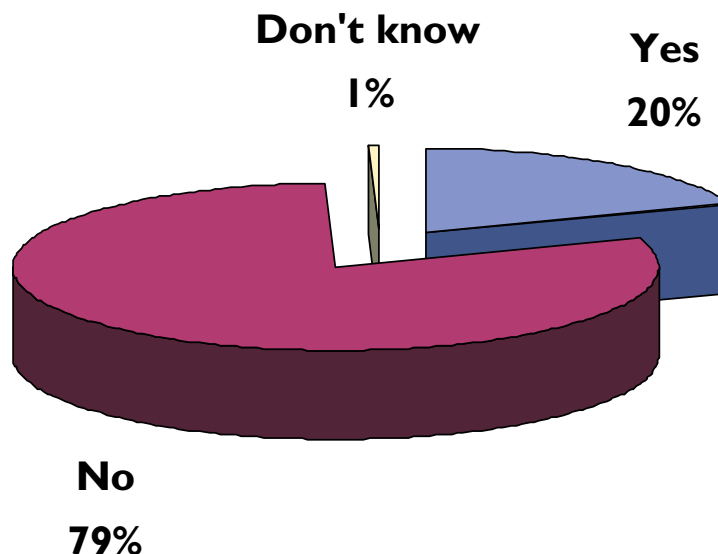


Figure 4.28:
Likelihood of organization's employees telecommuting
full or part-time in the next year

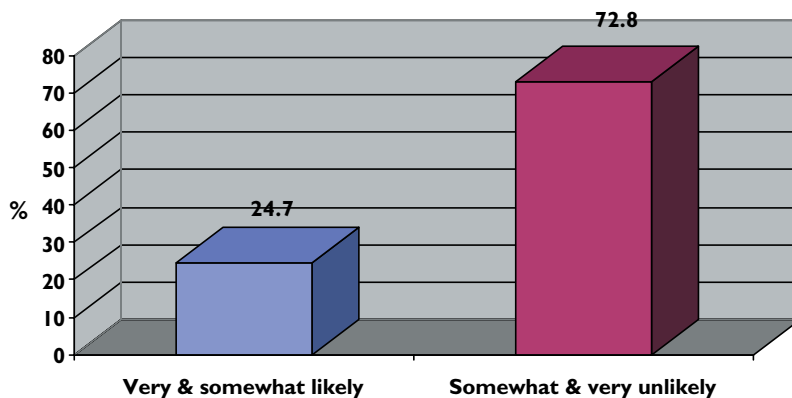


Table 4.51:
Work-at-home frequency

Number of days in the past week spent working from home	Percent	Cumulative
7	9.8	9.8
6	1.0	10.8
5	7.8	18.6
4	1.6	20.2
3	2.6	22.8
2	5.2	28.0
1	6.7	34.7
0	65.3	

Table 4.52:
Telecommuting frequency

How often do you telecommute?	Percent	Cumulative
Every day	6.7	6.7
1+ days/week	4.7	11.4
Occasionally	11.9	23.3
Never	75.6	
Refused	1.0	

of the workforce. Just under one half of all respondents (48.1%) noted having worked for pay or profit in the past week, while 51.6% did not. Respondents who had worked for profit or pay (48.1%) were asked for the number of days, in the past week, they spent working from home. Table 4.51 summarizes the results. It would be unreasonable to expect all workers to be potential telecommuters--not all jobs lend themselves to telecommuting. The survey asked about the amount of time working respondents spent using the phone or computer in their work. This helped to identify the proportion of the working population in Vermont that would likely find it difficult to use telecommunications to allow them to telecommute. More than two fifths of working respondents (45.1%) suggested spending most (29.0%) or about half (16.1%) of the time on the telephone or with a computer, in the course of their business or employment. More than half (53.4%) indicated spending less than half (37.3%) or none of the time (16.1%) on the phone or computer. Almost one quarter of working respondents (23.3%) said they telecommute every day (6.7%), at least one day a week (4.7%), or occasionally (11.9%). Three quarters (75.6%) noted never telecommuting. Table 4.52 holds the results.

Less than ten percent (7.5%) of respondents who never telecommute expect to begin

telecommuting in the next year. A large majority (90.4%) does not. Respondents who never telecommute (36.4%) were asked to provide their reasons. Table 4.53 depicts the reasons cited.

Telecommuting may be a larger or smaller phenomenon in Vermont, depending how it is looked at. When the researchers asked about “telecommuting,” nonresidential respondents indicated about one fifth of the time that someone had recently been telecommuting in the organization. In a similar vein, slightly more than one-fifth of residential respondents in the workforce indicated that they telecommuted at least occasionally. More narrowly, only 11.4% said they telecommuted at least one day or more on average. When the researchers asked about work out of the home, the numbers were larger. Almost one-fifth of residential respondents said that they worked out of their homes in their business or for employment five or more days per week. More than one-third said they did so at least one day per week. And more than two-fifths of organizations surveyed responded that the organization was located in a residence. Home-based work represents a significant part of work and business in Vermont.

Table 4.53:
Reasons for not telecommuting

	Percent
Job not appropriate	43.8
Not interested	22.6
Employer does not allow	16.4
No equipment at home	12.3
No equipment at office	4.8
Too expensive	3.4
Other	3.4

PAYPHONE MARKET DEMANDS

Almost two fifths of all respondents (36.9%) believe that more payphones are needed in their community, while 50.9% do not. As shown in Figure 4.30, the perceived need for more payphones in the community has declined since 1995, despite a decline in the number of payphones actually available. In the 2003 survey, just under two fifths (38.4%) believed state or local governments should help finance payphones, if more are needed in Vermont. Under one fifth of respondents in the 2003 survey (18.7%) have, at one time, needed to use a payphone somewhere in Vermont over the past six months, but were unable to find one where they were.

Figure 4.29:
Resident perceptions regarding payphones in Vermont

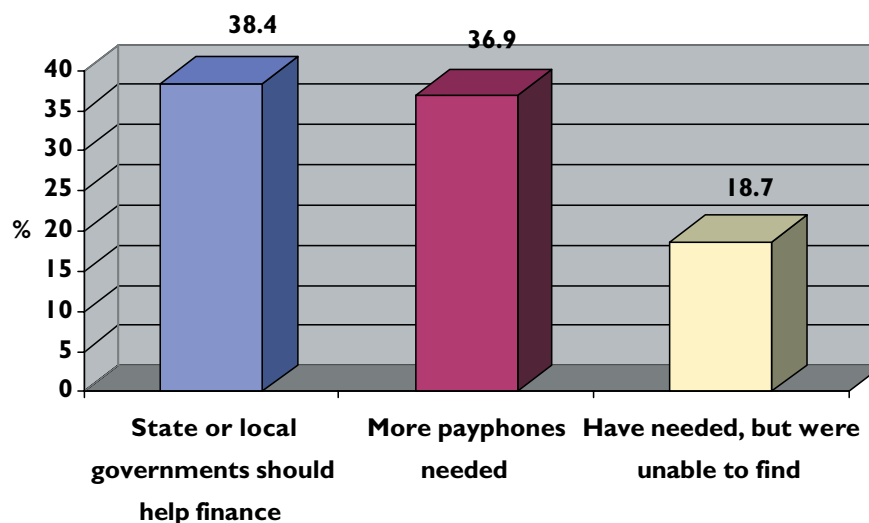
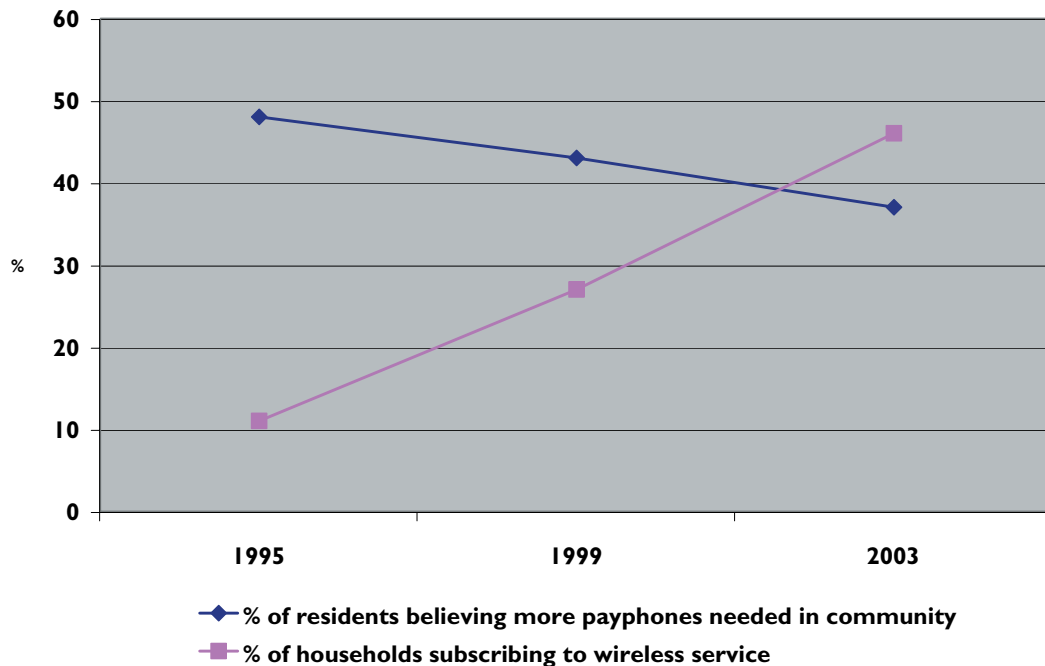


Figure 4.30:
Wireless subscription and perceived need for payphones



CABLE / SATELLITE (DISH) TELEVISION

The residential survey asked respondents a series of questions about television subscribership. Researchers first asked respondents for the number of televisions they have in their household. Table 4.54 holds the results. While only one half (50.5%) of residents with televisions are currently subscribed to cable television, more than a third are currently subscribed to satellite (dish) television. Only ten percent (10.4%) of respondents with televisions have reduced or canceled their cable TV service because they got a satellite dish. As Figure 4.31 shows, there is a degree of overlap in the populations of cable and satellite TV subscribership. Despite the introduction of local channels on satellite TV service, there remains a fraction of the population taking both satellite service and cable TV service. Non-cable television subscribers (48.6%) were asked if cable television wires run past their houses, so that they could subscribe if they wanted to. Less than a third (31.8%) said cables did run past their homes, while 62.6% said they did not.

Table 4.54:
Number of TVs in household

Number of TVs in household	Percent
None	1.7
1	42.4
2	32.2
3	15.7
4	5.7
5	1.5
6	0.2
9	0.2
Don't Know	0.2

By crosstabulating the information about satellite subscribership, cable TV subscribership, and cable modem subscribership, it is possible to use the survey results to estimate the “take rates” for various services. Table 4.55 shows the take rates for cable TV service in those areas where it is available and shows the difference in satellite take rates in areas where cable is available and where it is not available. About three quarters of households in Vermont take cable TV service where it is available, and the take rate for satellite service is dramatically lower in areas where cable TV is available. Figure 4.33 shows the percentage of cable customers who have elected to take cable modem service.

Figure 4.31:
Cable vs. satellite television...

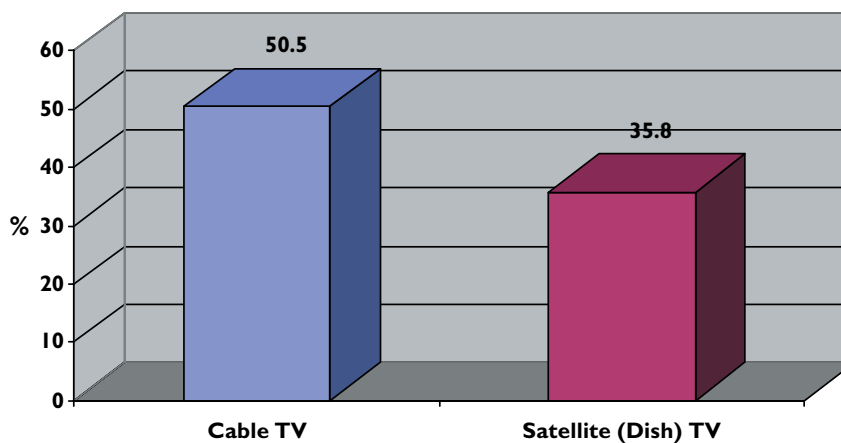


Figure 4.32:
Cable and satellite subscribership

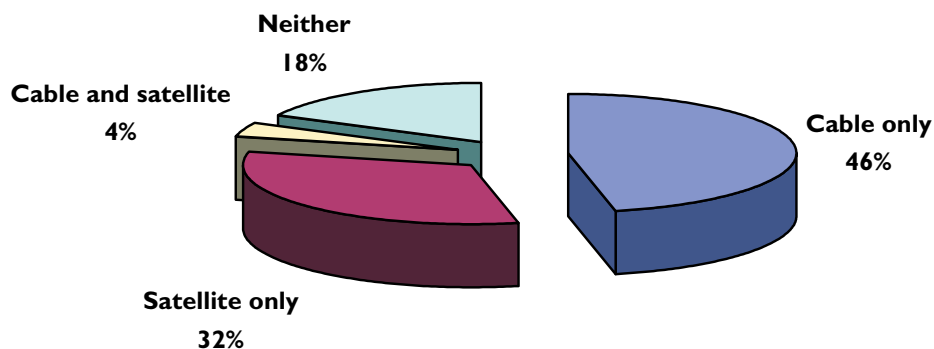
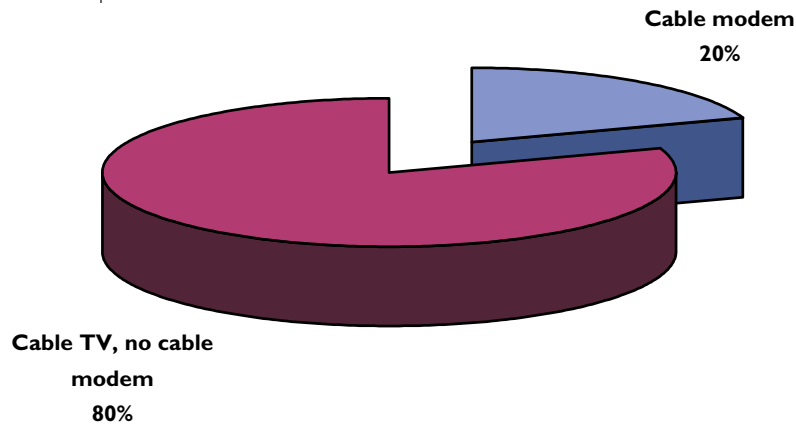


Table 4.55:
Cable and satellite TV take rates

Among households with TVs

	Residents with cable access	Residents without cable access
Percent taking satellite	16.5	64.6
Percent taking cable	76.2	N/A

Figure 4.33:
Cable modem take rates among cable customers



PUBLIC ACCESS TELEVISION

The residential survey asked respondents, both cable subscribers and non-cable subscribers, a series of questions regarding Public, Educational, and Governmental (PEG) access television. The survey asked about viewership, interest in and opinions about PEG access and related issues. Researchers presented respondents with televisions in their households (98.3%) the following statement: “Public access television channels, sometimes called PEG access channels, are designated cable TV channels used exclusively for transmitting television programs produced by the public, educators, and local or other government.” Almost two thirds (62.7%) noted having watched a public access channel at some point in their lives, while 36.0% had not.

Respondents were asked for the number of hours per week they watched public access channels in the past year. Table 4.57 depicts the results as collected for all respondents with a TV and for cable TV subscribers. About one-third of cable subscribers reported watching at least an hour of PEG access per week on average.

Respondents were asked for their opinion about the importance of having public access channels at all, and the importance of having enough channels to accommodate all the programs the public might want to place on them. Almost two thirds (61.7%) of respondents with television said it was very (32.0%) or some-

what (29.7%) important to have PEG access channels, while one third (33.0%) said it was of little importance (18.3%) or unimportant. Respondents were also asked, “If the public wants to air more programs than it is possible with the capacity of the current PEG channels, how important would it be for the cable company to provide additional PEG channels?” One half (49.5%) of respondents with television indicated it was very (20.1%) or moderately (29.4%) important for the cable company to provide additional PEG channels. More than one third (39.8%) said it was of little importance

Table 4.56:
Ever watched a public access channel?

	Percent among all respondents with a TV	Percent among households with cable
Yes	62.7	72.9
No	36.0	25.6
Don't Know	1.3	1.5

Table 4.57:
Number of hours per week watched public access channels in the past year

	Among all respondents with a TV		Among households with cable	
	Percent	Cumulative	Percent	Cumulative
10+ hours/week	2.0	2.0	2.5	2.5
5-10 hours/week	3.8	5.8	4.5	7.0
3 - 5 hours/week	6.9	12.7	9.0	16.1
1 - 2 hours/week	15.0	27.7	18.6	34.7
< 1 hour/week	22.8	50.5	28.6	63.3
0 hours	46.4		32.2	
Don't Know	3.0		4.5	

(15.7%) or unimportant (24.1%). Figures 4.34 and 4.35 show that there is very little difference in the way that cable subscribers and non-cable subscribers answered these questions, other than slightly higher support for PEG channels among cable subscribers. More than two-thirds of cable subscribers (67.4%)—who pay for PEG access directly or indirectly through their cable bill—thought PEG channels were very or moderately important. Cable subscribers were more evenly split on the question of whether or not the number of PEG channels should expand to accommodate more PEG programming if needed. About half (50.3%) thought more channels would be very or moderately important. About two-fifths (39.7%) thought it would be unimportant or of only a little importance. About one in ten didn't know or were not sure.

On a related issue, the survey asked respondents about their interest in a Vermont version of “C-SPAN,” which broadcasts sessions of the Congress. Almost two thirds (63.2%) of respondents with televisions would watch live television broadcasts from the Statehouse regularly (9.9%) or occasionally (53.3%), while 33.2% said they would never watch it. A few respondents (3.6%) did not know or were unsure. This figure has remained stable over time. A similar question in the 1995 and 1999 surveys indicated that those who would watch regularly or occasionally stood then at 58% and 63%, respectively.

Figure 4.34:
How important is it to have PEG access channels?

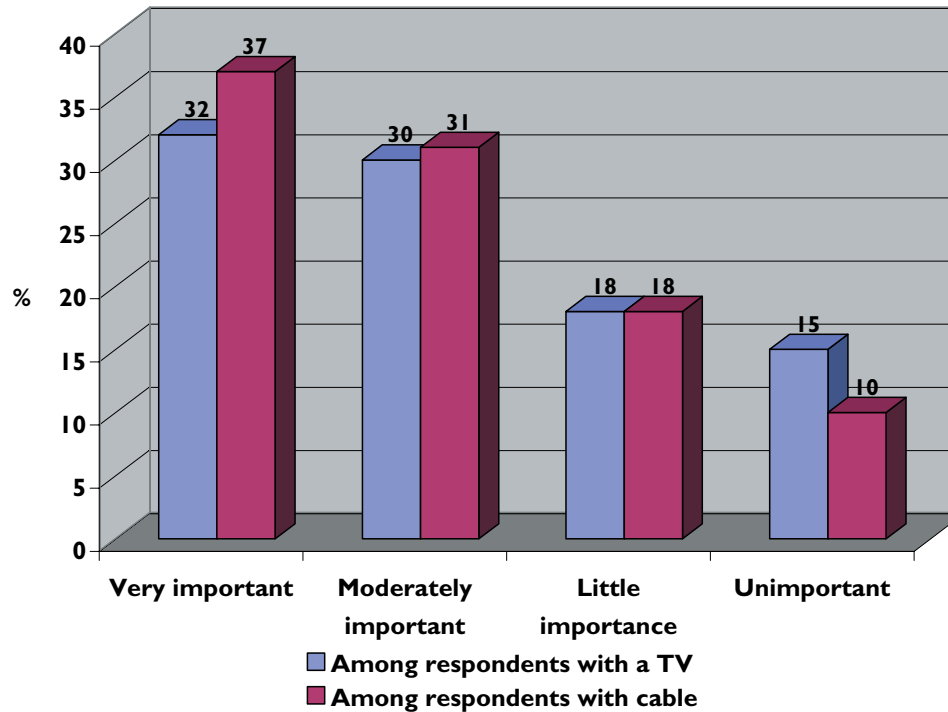


Figure 4.35:
How important is it to provide additional PEG channels for more programming?

